

PAPERS BY BELL LABORATORIES AUTHORS

COMPUTING/MATHEMATICS

- An Analysis of Simple Voting Systems for Electing Committees.** P. C. Fishburn, *SIAM Appl Math*, 41, No. 3 (December 1981), pp 499-502.
- Asymptotic Distributions of Functions of Eigenvalues.** J. C. Lee, *Statistical Distributions in Scientific Work*, 4, edited by C. Taillie, G. P. Patil, and B. A. Baldessari, Boston: D. Reidel, 1981, pp 293-303.
- Classes of Functions for Computing on Binary Trees.** F. Hawrusik, K. N. VenKataraman, and A. Yasuhara, *Conf Proc Thirteenth Annual ACM Symp on Theory of Computing* (1981), pp 19-27.
- Cognitive Factors in the Use of Menus and Trees: An Experiment.** R. B. Allen, *Proc Nat Telecommun Conf*, 1981 (December 2, 1981), pp F.25.1-5.
- Constant Scoring Rules for Choosing One Among Many Alternatives.** W. V. Gehrlein and P. C. Fishburn, *Quality and Quantity*, 15 (1981), pp 203-10.
- Designing Software Systems for People; Is There ONE Appropriate Interface Language?** M. K. Seagren and J. E. Tschirgi, *Proc 1981 Nat Telecommun Conf*, 2, No. 4 (November 29, 1981), pp D6.3.1-4.
- Dimension 2000 PBX Maintenance Software.** J. R. Lothrop, *Conf Record of the 1981 Nat Telecommun Conf*, 1 (1981), pp A6.6.1-5.
- Inverted Orders for Monotone Scoring Rules.** P. C. Fishburn, *Discrete Appl Math*, 3 (1981), pp 27-36.
- Maximum Semiorders in Interval Orders.** P. C. Fishburn, *SIAM J on Algebra and Discrete Methods*, 2, (1981), pp 127-35.
- A Note on Eigenvector Decomposition of Correlation Matrices.** R. N. McDonough, *J Acoust Soc Amer*, 68, No. 1 (July 1980), pp 165-6.
- An Overview of BLN: A Bell Laboratories Computing Network.** K. E. Coates, D. L. Dvorak, and R. M. Watts. *Proc Seventh Data Commun Symp*, Los Angeles: IEEE Computer Soc Press, October 27-29, 1981, pp 224-9.
- Some Recent Work in User Command Language Structure.** M. K. Seagren, *Proc Nat Electronics Conf*, XXXV (October 1, 1981), pp 166-9.
- Subjective Expected Utility: A Review of Normative Theories.** P. C. Fishburn, *Theory and Decision*, 13 (1981), pp 139-99.
- On Unimodality for Linear Extensions of Partial Orders.** F. R. K. Chung, P. C. Fishburn, and R. L. Graham, *SIAM Algebra and Discrete Methods*, 1 (1980), pp 405-10.
- Uniqueness Properties in Finite-Continuous Additive Measurement.** P. C. Fishburn, *Math Soc Sci*, 1 (1981), pp 145-153.
- A Useful Property of the Coefficients of a Walsh-Hadamard Transformation.** W. D. Lyle, Jr., and F. Forte, *IEEE Trans Acoust, Speech, Signal Process*, ASSP-28, No. 4 (August 1980), pp 479-80.
- A Versatile Queueing Model for Data Switching.** R. V. Laue, *Proc Seventh Data Communications Symp*, (October 27-29, 1981), pp 118-28.
- Weight Enumerators of Self-Orthogonal Coder Over GF(3).** C. L. Mallows and N. J. A. Sloane, *SIAM J Algebraic Discrete Methods*, 2, No. 4 (1981), pp 452-60.

ENGINEERING

- An Analysis of Dynamic Virtual Circuit Routing.** E. F. Wunderlich, *Nat Telecommun Conf Record*, 1 (November 1981), pp A.3.3.1-6.
- The Bond Graph.** S. H. Bertz, *J Chem Soc, Chem Commun*, (1981), pp 818-20.
- A Comparison of Three Schemes for Filtering Signals Which Have Propagated Through a Random Multipath Medium.** D. T. Mangano, *J Acoust Soc Amer*, 67, No. 3 (March 1980), pp 842-52.
- Control Issues in a Multi-Process Computer-Aided Design System Containing Expert Knowledge.** M. W. Krueger, R. E. Cullingford, and D. A. Bellavance, 1981 *Proc Int Conf on Cybernetics and Society* (October 26-28, 1981), pp 139-43.

Degradation of Detectability of Signals in the Output of a Limited Amplifier Overloaded by a Sinewave. G. H. Robertson, *J Acoust Soc Amer*, COM-29, No. 2 (February 1981), pp 132-6.

Design of Rectangular Horn Arrays With Oversized Aperture Elements. N. Amitay and M. J. Gans, *IEEE Trans Antennas and Propagation*, AP-29 (November 1981), pp 871-84.

Dielectric Resonator Filters for Communication Systems. H. C. Wang and C. C. Ren, *National Telecommun Conf Record*, 3, No. E6.2 (1981).

An Example of the Variability of the Spectrum of Surface-Reflection Loss for Signals From Underwater Explosives. A. Konan, *J Acoust Soc Amer*, 67, No. 6 (June 1980), pp 2110-2.

Failure Probability of Optical Fibers in Bending. P. D. Patel, H. C. Chandan, and D. Kalish, *Proc Thirtieth Int Wire and Cable Symp* (November 17-19, 1981), pp 37-44.

Forecasting Reject Rate of Tested LSI Chips. S. C. Seth and V. D. Agrawal, *IEEE Electron Device Lett*, EDL-2, No. 11 (November 1981), pp 286-7.

Frequency Stability of a cw Signal Transmitted Over a Long Underwater Path. G. H. Robertson, *J Acoust Soc Amer*, 69, No. 3 (March 1981), pp 672-5.

Fundamental Characteristics of Optical Fibers. W. B. Gardner, *Telecommun J*, 48, No. 11 (November 1981), pp 638-42.

Improved Numerical Efficiency in a Frequency Tracker. G. W. Grube and C. Tom, *J Acoust Soc Amer*, 68, No. 4 (October 1980), pp 1127-8.

Information Transfer and Work Process Coordination in Automated vs. Manual Telephone Repair Systems. A. M. Wichansky, *NTC Record—1981*, *IEEE Natl Telecommun Conf*, 2 (November 29, 1981), pp D6.2.1-6.

Low-Frequency cw Coherence Measurements for Long Underwater Paths. G. H. Robertson and R. L. Wagner, *J Acoust Soc Amer*, 68, No. 3 (September 1980), pp 941-51.

Measurement of Radiated Emissions From Computer-Like Devices. D. N. Heirman, *Int Union of Radio Sci 20th General Assembly Abstracts—Sessions of Commissions*, (August 1981), pp 29.

Measurements of Underwater Signal Phase Stability Using a Moving Source. H. J. Young, *J Acoust Soc Amer*, 67, No. 6 (June 1980), pp 2025-8.

A Method of Calculating Average Array Signal Response in a Two-Path Medium. R. D. Worley, *J Acoust Soc Amer*, 67, No. 6 (January 1981), pp 2068-72.

Mixed-Mode Simulation in the MOTIS System. V. D. Agrawal, A. K. Bose, P. Kozak, H. N. Nham, and E. Pacas-Skewes, *J Digital Systems*, V, No. 4 (1981), pp 383-400.

New Color Coded Dual Insulated Riser Cables. H. M. Dillow and T. S. Dougherty, *Proc 30th Int Wire and Cable Symp* (1981), pp 318-23.

No. 5 ESS—Overview. F. T. Andrews, Jr., and W. B. Smith, *Int Switching Symp*, 3, No. Paper 1 (September 21-25, 1981), pp 1-6.

Quick Connect—A Circuit Pack Breadboarding Technique. A. G. Lubowe and C. Philip Wu, *Fourteenth Annual Connectors and Interconnection Symp Proc* (November 11-12, 1981), pp 187-98.

The Reduction of Capstan Effectiveness by Cable Bending Resistance. A. J. Shashaty, *Proc Amer Soc of Mech Engrs*, Paper No. 80-WA/OCE-2 (November 16-21, 1980).

Signal Characterization Using Spectral Microanalysis. G. H. Robertson, *J Acoust Soc Amer*, 67, No. 4 (May 1980), pp 1663-9.

Similarity in the Modeling of Cable Twisting and Looping. A. J. Shashaty, *J of Hydronautics*, 13, No. 4 (October 1979), pp 133-4.

Steady-State Configuration of an Underwater Suspended Bipod Cable System. J. J. Mariano, *J Hydronautics*, 14, No. 3 (July 1980), pp 77-82.

Spatio-Temporal Characteristics of Threshold Adjacent to a Luminance Edge. J. O. Limb, *J Optical Soc of Amer*, 71 (October 1981), pp 1209-19.

Stress Relaxation Conditions in Spinodal Copper-Nickel-Tin Alloy Strip Used for Slotted Beam Connectors. A. Fox and E. O. Fuchs, *Proc 14th Annual Connector and Interconnections Symp* (November 11, 1981), pp 76-82.

Thermal Behavior of Experimental Plenum Cable Sheaths Determined in a

Radiant Heat Chamber. C. J. Arroyo, N. J. Cogelia, and R. J. Darsey, Proc Thirtieth Int Wire and Cable Symp (November 17-19, 1981), pp 87-98.

TV Bandwidth Compression Techniques Using Time Companded Differentials and Their Applications to Satellite Transmissions. K. Y. Eng and B. G. Haskell, Conf Record: Nat Telecommun Conf 1981, 2 (November 29, 1981), pp D7.4.1-5.

Twist Moments and Deformations in Submarine Cable Installation. A. J. Shashaty, Amer Soc Mech Engrs Conf Proc, Paper No. 81-WA/OCE-1 (November 15-20, 1981).

An Uncompensated Silicon Bipolar Junction Transistor Fabricated Using Molecular Beam Epitaxy. R. G. Swartz, J. H. McFee, P. Grabbe, and S. N. Finegan, IEEE Electron Device Lett, EDL-2, No. 11 (November 1981), pp 293-5.

Use of a Microwave Delay Link to Reduce the Dead Time in Electron Spin Echo Envelope Spectroscopy. J. L. Davis and W. B. Mims, Rev Sci Instruments, 52, No. 1 (January 1981), pp 131-2.

Wavelength Division Multiplexing Experiment Employing Dual-Wavelength LEDs and Photodetectors. K. Ogawa, T. P. Lee, C. A. Burrus, J. C. Campbell, and A. G. Dentai, Electronics Lett, 17, No. 22. (October 29, 1981), pp 857-9.

MANAGEMENT/ECONOMICS

Education and Training of the Industrial Regulatory Compliance Test Team. D. N. Heirman, 1981 IEEE Int Symp on Electromagnetic Compatibility Record, IEEE Pub. No. 81CH1675-8 (August 1981), pp 365-8.

Equivalences and Continuity in Multivalent Preference Structures. P. H. Farquhas and P. C. Fishburn, Oper Res, 29 (1981), pp 282-93.

Human Performance Engineering of a Telephone Company Software System. J. M. Guett, G. A. Schweickert, Jr., and A. Ephrath, 1981 Proc Int Conf Cybernetics and Soc (October 26-28, 1981), pp 386-9.

PHYSICAL SCIENCES

Addition of Diphenylphosphine Oxide to Arenesulfonylhydrazones: Novel Adducts From Tosylhydrazones and a New Synthesis of Alkyldiphenylphosphine Oxides From Trisylhydrazones. S. H. Bertz and G. Dabbagh, J Amer Chem Soc, 103 (1981), pp 5832-934.

Anharmonic Relaxation Times of Molecular Vibrational Modes in Alkali Halide Crystals. A. R. Chaplyvy, W. E. Moerner, and A. J. Sievers, Phys Rev Lett, 47, No. 15 (October 12, 1981), pp 1082-5.

Binding and Dissociation of CO on Transition Metal Surfaces. W. Adreoni and C. M. Varma, Phys Rev Lett, 23, No. 2 (January 15, 1981), pp 437-44.

2,5-Bis(methoxycarbonyl)-4-hydroxycyclopent-2-en-1-one as an Intermediate in Weiss' Glyoxal Reaction. Analogous Chemistry of Malondialdehyde. S. H. Bertz, W. O. Adams, and J. V. Silverton, J Org Chem, 46 (1981), pp 2828-30.

Brillouin Scattering From Polyepoxide Solutions and Gels. J.-P. Jarry and G. D. Patterson, Macromolecules, 14 (1981), pp 1281-4.

C1 Chemisorption on the Ag(001) Surface: Geometry and Electronic Structure. H. S. Greenside and D. R. Hamann, Phys Rev B 23, No. 10 (1981), pp 4879-87.

Collective Modes of Photoexcited Electron-Hole Plasmas in GaAs. A. Pinczuk, J. Shah, and P. A. Wolff, Phys Rev Lett, 47, No. 20 (November 16, 1981), pp 1487-90.

A Comparison of Pd-Pd and Pd-Au Connector Contacts in Air and in Toluene Saturated Air. E. S. Sproles, Jr., Proc 1981 Connectors and Interconnections Symp (November 11-12, 1981), pp 267-80.

Computer Model of Metallic Spin Glasses. L. R. Walker and P. E. Walstedt, Phys Rev, 22, No. 8 (October 15, 1980), pp 3816-42.

Coupled Modes with Random Propagation Constants. H. E. Rowe and I. M. Mack, Radio Sci, 16, No. 4 (July-August 1981), pp 485-93.

Crystallographic Facets Chemically Etched in GaInAsP InP for Integrated Optics. K. Furuya, L. A. Coldren, B. I. Miller, and J. A. Rentschler, Elect Lett, 17, No. 17 (August 20, 1981), pp 582-3.

- Dislocation Motion in hcp ^4He .** M. A. Paalanen, D. J. Bishop, and H. W. Dail, *Phys Rev Lett*, **46**, No. 10 (March 9, 1981), pp 664-7.
- The Effect of HCl and Cl_2 on Pd Inlay Coupons and Pd Connector Contacts.** E. S. Sproles, Jr., and S. P. Sharma, *Proc 1981 Connectors and Interconnections Symp* (November 11-12, 1981), pp 207-16.
- Effect of Ion Sputtering on the Surface Composition of Indium-Lead and Indium-Tin Alloys.** R. P. Frankenthan and D. J. Siconolfi, *Surface Sci*, **111**, No. 2 (1981), pp 317-24.
- Effects of Grain Boundaries on Laser Crystallized Poly-Si MOSFETs.** K. K. Ng, G. K. Celler, E. I. Povilonis, R. C. Frye, H. J. Leamy, and S. M. Sze, *IEEE Electron Device Lett*, *EDL-2*, No. 12 (December 1981), pp 316-8.
- Ferroelectric Behavior and Phase Transitions in the SrAlF_6 Family.** J. Ravez, S. C. Abrahams, J. P. Chaminade, A. Simon, J. Grannec, and P. Hagenmuller, *Ferroelectrics*, **38**, Part 4 (December 1981), pp 773-6.
- Ferroelectric-Ferroelastic Properties of the $\text{Na}_5\text{W}_3\text{O}_{19}\text{F}_8$ Family.** J. Ravez, M. Elaatmani, P. Hagenmuller, and S. C. Abrahams, *Ferroelectrics*, **38**, Part 4 (December 1981), pp 777-80.
- Gamma-Ray Lines and Continuum Radiation From the Galactic Center.** M. Leventhal, C. J. MacCallum, A. F. Hutters, and P. D. Stang, *Astrophys J*, **240** (August 15, 1980), pp 338-43.
- An $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}/\text{Si}_3\text{N}_4$ n-Channel Inversion Mode MISFET.** A. S. H. Liao, R. F. Leheny, R. E. Nahory, and J. C. DeWinter, *IEEE Electron Device Lett*, *EDL-2*, No. 11 (November 1981), pp 288-90.
- Light Scattering Spectroscopy of Electrons in GaAs-(AlGa)as Heterostructures: Correlation with Transport Properties.** A. Pinczuk and J. M. Worlock, *J Vac Sci Tech*, **19**, No. 3 (September/October 1981), pp 561-3.
- Measurement of GaAs Field-Effect Transistor Electronic Impulse Response by Picosecond Optical Electronics.** P. R. Smith, D. H. Auston, and W. M. Augustyniak, *Appl Phys Lett*, **39**, No. 9 (November 1, 1981), pp 739-41.
- Modeling of Bipolar Device Structures—Physical Simulation.** J. L. D'Arcy, E. J. Prendergast, and P. Lloyd, *Tech Digest Int Elect Devices Mtg* (December 7-9, 1981), pp 516-9.
- Observation of Picosecond Photon Echoes in GaP:N.** P. Hu, S. Chu, and H. M. Gibbs, *Picosecond Phenomena II*, edited by R. Hochstrasser, W. Kaiser, and C. V. Shank, *Springer Series in Chemical Physics*, **14**, New York: Springer, 1980, pp 308-9.
- Pair-Breaking in the Superconductors Near and Below Antiferromagnetic Transitions.** T. V. Ramakrishnan and C. M. Varma, *Phys Rev Lett*, **24**, No. 1 (July 1, 1981), pp 137-43.
- Phase-Transition Variation With Composition in Solid Solutions of $\text{K}_2\text{Cd}_2(\text{SO}_4)_3$ With $\text{Ti}_2\text{Cd}_2(\text{SO}_4)_3$.** A. Sutura, K. Nassau, and S. C. Abrahams, *J Appl Cryst*, **14**, No. 5 (October 1, 1981), pp 297-9.
- Photochemistry in Planetary Atmospheres.** J. S. Levine and T. E. Graedel, *EOS—Trans Amer Geophys Union*, **62** (1981), pp 1177-81.
- Piezoelectric $\text{K}_3\text{Ta}_3\text{B}_3\text{O}_{12}$: Crystal Structure at Room Temperature and Crystal Growth.** S. C. Abrahams, L. E. Zyontz, J. L. Bernstein, J. P. Remeika, and A. S. Cooper, *J Chem Phys*, **75**, No. 11 (December 1, 1981), pp 5456-60.
- The Quantitation of Electron Energy Loss Spectra.** D. C. Joy and D. M. Maher, *J Microscopy*, **124**, No. 1 (October 1981), pp 37-48.
- Study of Driven Lower-Hybrid Waves in the Alcator Tokamak Using CO_2 Laser Scattering.** C. M. Surko, R. E. Slusher, J. J. Schuss, R. P. Parker, I. H. Hutchinson, D. Overskei, and L. S. Scaturro, *Phys Rev Lett*, **43**, No. 14 (October 1, 1979), pp 1016-9.
- Study of Plasma Density Fluctuations by the Correlation of Crossed CO_2 Laser Beams.** C. M. Surko and R. E. Slusher, *The Physics of Fluids*, **23**, No. 12 (December 1980), pp 2425-39.
- Ternary Transition Metal Phosphides: High Temperature Superconductors.** H. Barz, H. C. Ku, G. P. Meisner, Z. Fisk, B. T. Matthias, *Proc Nat Academy Sci*, **77**, No. 6 (June 1980), pp 3132-4.
- Thermal Effects on the Photopolymerization of Acrylate Resins.** F. R. Wight, *J Radiation Curing*, **8**, No. 4 (October 1981), pp 24-7.
- A Time-Dependent X-ray Study of Compound Formation in Gold-Lead, Gold-Tin and Gold-Indium Films.** T. M. Vandenberg and R. A. Hamm, *Proc Symp Thin-*

Film Interfaces and Interactions, edited by T. E. E. Baglin and T. M. Poak (1980), pp 283-9.

Use of Sapphire Liners to Eliminate Edge Growth in LPE (AL₁Ga)As. M. C. Tamargo and C. L. Reynolds, Jr., *J Crystal Growth*, 55 (November 1981), pp 325-9.

Whisker Growth Induced by Silver Photodoping in Ge_{0.8}Se_{1-x} Films. C. H. Chen, *Appl Phys Lett*, 37 (December 1980), p 1075.

SOCIAL AND LIFE SCIENCES

Composition and Editing of Text. R. B. Allen, *Ergonomics*, 24, No. 8 (1981), pp 611-22.

Expected Utility and Approval Voting. P. C. Fishburn and S. J. Brams, *Behavioral Sci*, 26 (1981), pp 136-42.

Human Factors of Telecommunication in Noisy Environments. H. R. Silbiger, *Proc NEC*, 35 (1981), pp 170-5.

Reducing Simple Majorities From Approval Voting Ballot Data. P. C. Fishburn and S. J. Brams, *Soc Sci Res*, 10 (1981), pp 256-66.

Time, Distance, and Feature Trade-Offs in Visual Apparent Motion. P. Burt and G. Sperling, *Psych Rev*, 88 (1981), pp 171-95.

SPEECH AND ACOUSTICS

Array Gain for Signals and Noise Having Amplitude and Phase Fluctuations. L. I. Kleinberg, *J Acoust Soc Amer*, 67, No. 2 (February 1980), pp 572-7.

Degradation of the Signal-to-Noise Ratio of Gaussian Signals in Gaussian Noise Transmitted Over a Digital Channel. W. D. Lyle, Jr., *J Acoust Soc Amer*, 67, No. 4 (April 1980), pp 1256-65.

The Elastic Problem of the Flattened Cylinder Type of Underwater Acoustical Compliance Unit. A. J. Shashaty, *J Acoust Soc Amer*, 66, No. 6 (December 1979), pp 1818-25.

Fluctuations in Underwater Acoustic Delay Differences Between Orders of Arrival. H. W. Broek and J. E. Lawlor, *J Acoust Soc Amer*, 70, No. 3 (September 1981), pp 788-94.

Infrasound Ambient Ocean Noise Measurements: Eleuthera. R. H. Nichols, *J Acoust Soc Amer*, 69, No. 4 (April 1981), pp 974-81.

Influence of Data Window Shape on Detectability of Small cw Signals in White Noise. G. H. Robertson, *J Acoust Soc Amer*, 67, No. 4 (April 1980), pp 1274-6.

Maximum Likelihood Detection and Estimation for Harmonic Sets. T. W. Eddy, *J Acoust Soc Amer*, 68, No. 1 (July 1980), pp 149-55.

The Metacepstrum. P. Hirsch, *J Acoust Soc Amer*, 69, No. 3 (March 1981), pp 863-5.

Model for Spatial Variability Effects on Single-Path Reception of Underwater Sound at Long Ranges. G. H. Robertson, *J Acoust Soc Amer*, 69, No. 1 (January 1981), pp 112-23.

Noise Correlation Functions for Anisotropic Noise Fields. R. J. Talham, *J Acoust Soc Amer*, 69, No. 1 (January 1981), pp 213-5.

Noise Correlation Functions for Arbitrary Receiver Orientation and Steering Direction in Vertically Anisotropic, Azimuthally Isotropic Noise Fields. C. I. Oelkers, *J Acoust Soc Amer*, 67, No. 3 (March 1980), pp 864-7.

A Pulse Driving Function Generator for LPC Synthesis of Voiced Segments of Speech. W. T. Hartwell and D. P. Prezas, *IEEE Trans Acoust, Speech, and Signal Processing, ASSP-29*, No. 6 (December 1981), pp 1113-6.

Stress and Deformation Analysis of an Acoustical Compliance Tube for Use in Underwater Sound Projectors. A. J. Shashaty and H. M. Kruchten, *J Acoust Soc Amer*, 66, No. 6 (December 1979), pp 1826-9.

